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SMSYZ¹WTGALITPCGPEEELPIX¹PLSNSLX²RFHNKVYSTTSRSASLRAKKVTFDRVQV
LDAHYSVLQDVKRAASKVSARLLTVEEACALTPPHSAKSRYGFGAKEVRSLSRRAVNHIR
SVWEDLLEDQHTPIDTTIMAKNEVF CIDPTKGGKKPARLIVYPDLGVRVCEKMALYDIAQK
LPKAIMGPSYGFQYSPAERVDFLLKAWGSKKDPMGFSYDTRCFDSTVTERDIRTEESIYQA
CSLPQEARTVIHSLTERLYVGGPMTNSKGQSCGYRRCRASGVFTTSMGNTMTTCYIKALAAC
KAAGIVDPVMLVCGDDLVISESQGNNEEDERNLRAFTEAMTRYSAAPPGDLPRPEYDLELIT
SCSSNVSVALDSRGRRRYFLTRDPTTPX³TRAAWETVRHSPVNSWLGNI IQYAPT IWVRMVI
MTHFFSILLAQDTLNQNLNFEMYGAVYSVNPLDLP AIIERLHGLEAFSLHTYSPHEL SRVA
ATLRKLGAPPLRAWKSRARAVRASLIAQGARA AICGRYLFNWAVKTKLKLTP LPEASRLDL
SGWFTVGAGGGDIYHSVSHARPRLLLLCLLLLSVGVGIFLLPDR

FIG. 1

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TCY¹ATGTCY²TACY³CY⁴TGGACY⁵GGY⁶GCCY⁷TY⁸ATY⁹ACACCATGTGGGCCCCGAAGAGG
AGAAGTTACCGATCAX¹CCCTCTGAGTAATTCGCTCATX²CGGTTCCATAATAAGGTGTACT
CCACAACCTCGAGGAGTGCCTCTCTGAGGGCAAAGAAGGTGACTTTTGGACAGGGTGCAGGT
GCTGGACGCACACTATGACTCAGTCTTGACAGGACGTTAAGCGGGCCGCCTCTAAGGTAGT
GCGAGGCTCCTCACGGTAGAGGAAGCCTGCGCGCTGACCCCGCCCCACTCCGCCAAATCGC
GATACGGATTTGGGGCAAAGAGGTGCGCAGCTTATCTAGGAGGGCCGTTAACCACATCCG
GTCCGTGTGGGAGGACCTCCTGGAAGACCAACATAACCCCAATTGACACAACATCATGGCT
AAAAATGAGGTGTTCTGCATTGATCCAATAAAGGTGGGAAAAAGCCAGCTCGCCTCATCG
TATACCCCGACCTTGGGGTCAGGGTGTGCGAAAAGATGGCCCTCTATGACATCGCACAAAA
GCTTCCCAAAGCGATAATGGGGCCATCCTATGGGTTCCAATACTCTCCCGCAGAACGGGTC
GATTTCTCTCTCAAAGCTTGGGGAAGTAAGAAGGACCCAATGGGGTTCTCGTATGACACCC
GCTGCTTTGACTCAACCGTCACGGAGAGGGACATAAGAACAGAAGAATCCATATATCAGGC
TTGTTCTCTGCCTCAAGAAGCCAGAACTGTCATACACTCGCTCACTGAGAGACTTTACGTA
GGAGGGCCCATGACAAACAGCAAAGGGCAATCCTGCGGCTACAGGCGTTGCCGCGCAAGCG
GTGTTTTACACCACAGCATGGGGAATACCATGACATGTTACATCAAAGCCCTTGCAGCGTG
TAAGGCTGCAGGGATCGTGGACCTGTTATGTTGGTGTGTGGAGACGACCTGGTCGTCATC
TCAGAGAGCCAAGGTAACGAGGAGGACGAGCGAAACCTGAGAGCTTTCACGGAGGCTATGA
CCAGGTATTCCGCCCCCTCCCGGTGACCTTCCCAGACCGGAATATGACTTGGAGCTTATAAC
ATCCTGCTCCTCAAACGTATCGGTAGCGCTGGACTCTCGGGGTCGCCGCCGGTACTTCCTA
ACCAGAGACCTTACCACTCCAX³TCACCCGAGCTGCTTGGGAAACAGTAAGACACTCCCCTG
TCAATTCTTGGCTGGGCAACATCATCCAGTACGCCCCACAATCTGGGTCCGGATGGTCAT
AATGACTCACTTCTTCTCCATACTATTGGCCCAGGACACTCTGAACCAAAATCTCAATTTT
GAGATGTACGGGGCAGTATACTCGGTCAATCCATTAGACCTACCGGCCATAATTGAAAGGC
TACATGGGCTTGAAGCCTTTTCACTGCACACATACTCTCCCCACGAACTCTCACGGGTGGC
AGCAACTCTCAGAAAACCTTGGAGCGCCTCCCCTTAGAGCGTGGAAGAGTCGGGCGCGTGCC
GTGAGAGCTTCACTCATCGCCCAAGGAGCGAGGGCGGCCATTTGTGGCCGCTACCTCTTCA
ACTGGGCGGTGAAAACAAAGCTCAAACCTCACTCCATTGCCCGAGGCGAGCCGCCTGGATTT
ATCCGGGTGGTTTACCCTGGGCGCCGGCGGGGGCGACATTTATCACAGCGTGTGCGCATGCC
CGACCCCGCCTATTACTCCTTTGCCTACTCCTACTTAGCGTAGGAGTAGGCATCTTTTAC
TCCCCGATCGATGA

FIG. 2

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MAPITAYSQQTRGLLGCIITSLTGRDKNQVEGEVQVVSTATQSFLATCVNGVCWTVYHGAG
SKTLAGPKGPITQMYTNVDQDLVGWQAPPGARSLTPCTCGSSDLYLVTRHADVI PVRRRGD
SRGSLSPRPVSYLKGSSGGPLLCPSGHAVGIFRAAVCTRGVAKAVDFVPVESMETTMRSR
VFTDNSSPPAVPQTFQVAHLHAPTGS GKSTKVPAAYAAQGYKVLVLNPSVAATLGFGAYMS
KAHGIDPNIRTGVRTITTTGAPVTYSTY GFLADGGC SGGAYDIIICDECHSTDSTTILGIG
TVLDQAETAGARLVVLATATPPGSVTVPHPNIEEVALSNTGEIPFYGKAIP IEAIRGGRHL
IFCHSKKKCDELA AKLSGLGINAVAYYRGLDVSVIPTIGDVVVVATDALMTGYTGDFDSVI
DCNTCVTQTVD FSLDPTFTIETTTVPQDAVSR SQRRGRGTGRGRMGIYRFVTPGERPSGMFD
SSVLCECYDAGCAWYELTPAETSVRLRAYLNTPGLPVCQDHLEFWESVFTGLTHIDAHFLS
QTKQAGDNFPYLVAYQATVCARAQAPPPSWDQMWKCLIRLKPTLHGPTPLLYRLGAVQNEV
TLTHPITKYIMACMSADLEVVTSTWVLVGGVLAALAAAYCLTTGSSVIVGRIILSGRPAIVP
DREFLYQEFDEMEECASHLPYIEQGMQLAEQFKQKALG LLQTATKQAEAAAPVVESKWRAL
ETFWAKHMWNFISGIQYLAGLSTLPGNPAIASLMAFTASITSPLTTQSTLLFNILGGWVAA
QLAPPSAASAFVGAGIAGA AVGSIGLGKVLVDILAGYGAGVAGALVAFKVMMSGEMPSTEDL
VNLLPAILSPGALVVGVC AAILRRHVGPGE GAVQWMNRLIAFASRGNH²SPTHYVPESDA
AARVTQILSSLTITQLLKRLHQWINE DCSTPCSGSWLRD VWDWICTVL TDFKTWLQSKLLP
QLPGVPPFFSCQRGYKGVWRGDGIMQTTCP CGAQITGHVKNGSMRIVGPKTCSNTWHGT FPI
NAYTTGPCTPSPAPNYSRALWRVAAEYVEVTRVGDFHYVTGMTTDNVKCPQVPAPEFFT
EVDGVR LHRYAPACRPLLREEVTFQVGLNQYL VGSQLPCEPEPDVAVLTSMLTDP SHITAE
TAKRRLARGSPPSLASSSAIQLSAPSLKATCTTHHVSPDADLIEANLLWRQEMGG¹ITRVE
SENKVVLDSFDPLRAEEDEREVSVP AEILRKSKKFP AAMPIWARPDYNPPLLESWKDPDY
VPPVVHGCPLPPIKAPPIPPRRKR TVVLTESSVSSALAE LATKTFGSSESSAVDSGTATA
LPDQASDDGDKGSDVESYSSMPPLEGE PGDPDLSDGSWSTVSEEASEDVCC

FIG. 3

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ATGGCGCCCATCACGGCCTACTCCCAACAGACGCGGGGCTACTTGGTTGCATCATCACTA
GCCTTACAGGCCGGGACAAGAACCAGGTCGAGGGAGAGGTTTCAGGTGGTTTCCACCGCAAC
ACAATCCTTCCTGGCGACCTGCGTCAACGGCGTGTGTTGGACCGTTTACCATGGTGCTGGC
TCAAAGACCTTAGCCGGCCCAAAGGGGGCCAATCACCCAGATGTACACTAATGTGGACCAGG
ACCTCGTCGGCTGGCAGGCGCCCCCGGGGCGCGTTTCTTGACACCATGCACCTGTGGCAG
CTCAGACCTTTACTTGGTCACGAGACATGCTGACGTCATTCCGGTGCGCCGGCGGGGCGAC
AGTAGGGGGAGCCTGCTCTCCCCAGGCCTGTCTCCTACTTGAAGGGCTCTTCGGGTGGTC
CACTGCTCTGCCCTTCGGGGCACGCTGTGGGCATCTTCCGGGCTGCCGTATGCACCCGGGG
GGTTGCGAAGGCGGTGGACTTTGTGCCCGTAGAGTCCATGGAACTACTATGCGGTCTCCG
GTCTTCACGGACAACATCATCCCCCGGCCGTACCGCAGACATTTCAAGTGGCCACCTAC
ACGCTCCCACTGGCAGCGGCAAGAGTACTAAAGTGCCGGCTGCATATGCAGCCCAAGGGTA
CAAGGTGCTCGTCCTCAATCCGTCCGTTGCCGTACCTTAGGGTTTGGGGCGTATATGTCT
AAGGCACACGGTATTGACCCCAACATCAGAACTGGGGTAAGGACCATTACCACAGGCGCCC
CCGTCACATACTCTACCTATGGCAAGTTTCTTGCCGATGGTGGTTGCTCTGGGGGCGCTTA
TGACATCATAATATGTGATGAGTGCCATTTCAACTGACTCGACTACAATCTTGGGCATCGGC
ACAGTCCTGGACCAAGCGGAGACGGCTGGAGCGCGGCTTGTCTGCTCGCCACCGCTACGC
CTCCGGGATCGGTACCGTGCCACACCCAAACATCGAGGAGGTGGCCCTGTCTAATACTGG
AGAGATCCCCTTCTATGGCAAAGCCATCCCCATTGAAGCCATCAGGGGGGGAAGGCATCTC
ATTTTCTGTCAATTCCAAGAAGAAGTGCGACGAGCTCGCCGCAAAGCTGTCAGGCCTCGGAA
TCAACGCTGTGGCGTATTACCGGGGGCTCGATGTGTCCGTCATACCAACTATCGGAGACGT
CGTTGTCTGTGGCAACAGACGCTCTGATGACGGGCTATACGGGCGACTTTGACTCAGTGATC
GACTGTAACACATGTGTACCCAGACAGTTCGACTTCAGCTTGGATCCCACCTTCACCATTG
AGACGACGACCGTGCTCAAGACGCGAGTGTGCGCTCGCAGCGGCGGGGTAGGACTGGCAG
AGGTAGGATGGGCATCTACAGGTTTGTGACTCCGGGAGAACGGCCCTCGGGCATGTTTCGAT
TCCTCGGTCTGTGTGAGTGCTATGACGCGGGCTGTGCTTGGTACGAGCTCACCCCCGCGG
AGACCTCGGTTAGGTTGCGGGCCTACCTGAACACACCAGGGTTGCCCGTTTGCCAGGACCA
CCTGGAGTTCTGGGAGAGTGTCTTACAGGCCTCACCCACATAGATGCACACTTCTTGTCC
CAGACCAAGCAGGCAGGAGACAACCTTCCCCTACCTGGTAGCATAACCAAGCCACGGTGTGCG
CCAGGGCTCAGGCCCCACCTCCATCATGGGATCAAATGTGGAAGTGTCTCATACGGCTGAA
ACCTACGCTGCACGGGGCCAACACCCTTGCTGTACAGGCTGGGAGCCGTCCAAAATGAGGTC
ACCCTCACCCACCCATAAACCATAACATCATGGCATGCATGTCCGGCTGACCTGGAGGTCG
TCACTAGCACCTGGGTGCTGGTGGGCGGAGTCCCTTGCGAGCTCTGGCCGCGTATTGCCTGAC
AACAGGCAGTGTGGTCATTGTGGGTAGGATTATCTTGTCCGGGAGGCCGGCTATTGTTCCC
GACAGGGAGTTTCTCTACCAGGAGTTCGATGAAATGGAAGAGTGCGCCTCGCACCTCCCTT
ACATCGAGCAGGGAATGCAGCTCGCCGAGCAATTCAAGCAGAAAGCGCTCGGGTTACTGCA
AACAGCCACCAACAAGCGGAGGCTGCTGCTCCCGTGGTGGAGTCCAAGTGGCGAGCCCTT
GAGACATTCTGGGCGAAGCACATGTGGAATTTTCATCAGCGGGATACAGTACTTAGCAGGCT
TATCCACTCTGCCTGGGAACCCCGCAATAGCATCATTGATGGCATTTCACAGCCTCTATCAC
CAGCCCGCTCACCAACCAAGTACCCTCCTGTTTAACATCTTGGGGGGGTGGGTGGCTGCC
CAACTCGCCCCCCCCAGCGCCGCTTCGGCTTTCTGTGGCGCCGGCATCGCCGGTGCGGCTG
TTGGCAGCATAGGCCTTGGGAAGGTGCTTGTGGACATCTTGGCGGGTTATGGAGCAGGAGT
GGCCGGCGCGCTCGTGGCCTTCAAGGTATGAGCGGCGAGATGCCCTCCACCGAGGACCTG
GTCAATCTACTTCTGCCATCCTCTCCTGGCGCCCTGGTCTCGGGGTCGTGTGTGCAG
CAATACTGCGTCGACACGTGGGTCCGGGAGAGGGGGCTGTGCAGTGGATGAACCGGCTGAT
AGCGTTCGCCTCGCGGGGTAATCATGX²TTCCCCACGCACTATGTGCCTGAGAGCGACGCC
GCAGCGCGTGTACTCAGATCCTCTCCAGCCTTACCATCACTCAGCTGCTGAAAAGGCTCC
ACCAGTGGATTAATGAAGACTGCTCCACACCGTGTTCCGGCTCGTGGCTAAGGGATGTTTG
GGACTGGATATGCACGGTGTGACTGACTTCAAGACCTGGCTCCAGTCCAAGCTCCTGCCG

FIG. 4A

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CAGCTACCGGGAGTCCCTTTTTCCTCGTGCCAACGCGGGTACAAGGGAGTCTGGCGGGGAG
ACGGCATCATGCAAACCACCTGCCCATGTGGAGCACAGATCACCGGACATGTCAAAAACGG
TTCCATGAGGATCGTCGGGCCCTAAGACCTGCAGCAACACGTGGCATGGAACATTCCCCATC
AACGCATACACCACGGGCCCCCTGCACACCCTCTCCAGCGCCAAACTATTCTAGGGCGCTGT
GGCGGGTGGCCGCTGAGGAGTACGTGGAGGTCACGCGGGTGGGGGATTTCCACTACGTGAC
GGGCATGACCACTGACAACGTAAAGTGCCCATGCCAGGTTCCGGCTCCTGAATTCTTCACG
GAGGTGGACGGAGTGCGGTTGCACAGGTACGCTCCGGCGTGCAGGCCTCTCCTACGGGAGG
AGGTTACATTCCAGGTCGGGCTCAACCAATACCTGGTTGGGTCACAGCTACCATGCGAGCC
CGAACCGGATGTAGCAGTGCTCACTTCCATGCTCACCGACCCCTCCACATCACAGCAGAA
ACGGCTAAGCGTAGGTTGGCCAGGGGGTCTCCCCCTCCTTGGCCAGCTCTTCAGCTATCC
AGTTGTCTGCGCCTTCCTTGAAGGCGACATGCACTACCCACCATGTCTCTCCGGACGCTGA
CCTCATCGAGGCCAACCTCCTGTGGCGGCAGGAGATGGGCGGGAX¹CATCACCCGCGTGGAG
TCGGAGAACAAGGTGGTAGTCCTGGACTCTTTTCGACCCGCTTCGAGCGGAGGAGGATGAGA
GGGAAGTATCCGTTCCGGCGGAGATCCTGCGGAAATCCAAGAAGTTCCCCGCAGCGATGCC
CATCTGGGCGCGCCCGGATTACAACCCTCCACTGTTAGAGTCCTGGAAGGACCCGGACTAC
GTCCCTCCGGTGGTGCACGGGTGCCCCTTGCCACCTATCAAGGCCCTCCAATACCACCTC
CACGGAGAAAGAGGACGGTTGTCCTAACAGAGTCCTCCGTGTCTTCTGCCTTAGCGGAGCT
CGTACTAAGACCTTCGGCAGCTCCGAATCATCGGCCGTCGACAGCGGCACGGCGACCGCC
CTTCCTGACCAGGCCTCCGACGACGGTGACAAAGGATCCGACGTTGAGTCGTA CTCTCCA
TGCCCCCTTGAGGGGGAACCGGGGGACCCCGATCTCAGTGACGGGTCTTGGTCTACCGT
GAGCGAGGAAGCTAGTGAGGATGTCGTCTGCTGC

FIG. 4B

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GCCTCCAAAGCCGCCCTCATTTGAGGAAGGGCAGCGGATGGCGGAGATGCTCAAATCTAAGATACAAGGCCTCCT
ACAACAGGCCACAAGGCAAGCTCAAGACATACAGCCAGCTATACAGTCATCATGGCCCAAGCTTGAACAATTTT
GGGCCAAACACATGTGGAACCTTCATCAGTGGTATACAGTACCTAGCAGGACTCTCCACCCTACCGGGAAATCCT
GCAGTAGCATCAATGATGGCTTTTAGCGCCGCGCTGACTAGCCCACTACCCACCAGCACCACCATCCTCTTGAA
CATCATGGGAGGATGGTTGGCCTCTCAGATTGCCCCCCTGCCGGAGCCACTGGCTTCGTTGTCAGTGGTCTAG
TGGGGGCGGCCGTCGGAAGCATAGGCCTGGGTAAGATACTGGTGGACGTTTTGGCCGGGTACGGCGCAGGCATT
TCAGGGGCCCTCGTAGCTTTTAAGATCATGAGCGGCGAGAAGCCACGGTAGAAGACGTTGTGAATCTCCTGCC
TGCTATTCTGTCTCCTGGTGCCTTGGTAGTGGGAGTCATCTGTGCAGCAATCCTGCGTCGACACGTGGGTCCGG
GAGAGGGGGCTGTGCAGTGGATGAACCGGCTGATAGCGTTTCGCCTCGCGGGGTAATCATGCTTCCCCACGCAC
TATGTGCCTGAGAGCGACGCCGAGCGCGTGTACTCAGATCCTCTCCAGCCTTACCATCACTCAGCTGCTGAA
AAGGCTCCACCAGTGGATTAATGAAGACTGCTCCACACCGTGT

FIG. 5A

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ASKAALIEEGQORMAEMLSKIQGLLQQATRQAQDIQPAIQSSWPKLEQFWAKHMWNFISG IQYLAGLSTLP GNP
AVASMMAFSAALTSPLPTSTTILLNIMGGWLASQIAPPAGATGFVVSGLVGAAVGSIGLGKILVDVL AGY GAGI
SGALVAFKIMSGEKP TVEDVVNLLPAILSPGALVVGVICAILRRHVGPGE GAVQWMNRLIAFASRGNH ASPTH
YVPESDAAARVTQILSSLTITQLLKRLHQWINE DCSTPC

FIG. 5B